

# CANE SEATS for chairs

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Cornell Extension Bulletin 681

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## for chairs

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### Selecting the chair and cane

Chairs with small holes drilled through the frame around the seat opening should have cane seats. If these seats are carefully woven, they will be strong and wear well.

Cane for chair seating is made from a palm called *rattan*. The plants come from the Indian Archipelago, China, India, Ceylon, and the Malay Peninsula. They grow in dense forests and frequently reach tree height; then they fall over and form a matted undergrowth. The stem, which is covered with beautiful green foliage, grows in length from 100 to 300 feet and is seldom more than 1 inch in diameter. For export, these stems are cut in 10- to 20-foot lengths. The outer bark is stripped in widths varying from 1/16 to 3/16 inch and is cut in lengths from about 6 to 8 feet. Then it is tied in hanks of 1000 feet and is ready for the weaver. One such hank is enough for four chairs with medium-sized seats.

Seating cane differs from domestic sugar cane and from the cane known as *bamboo*, which grows in the Southern States. Bamboo, which is shorter, straighter, and thicker, is used for furniture, walking sticks, poles, and the like. Neither bamboo nor sugar cane is suitable for chair seating.

You can buy cane at chair-seating and craftsman's supply houses, and at certain mail order houses and department stores. Buy long, select cane (from 15- to 18-foot lengths) for medium or large chair seats. You can use shorter lengths but they have to be tied more often. Good cane is smooth, glossy on the right side, tough, and pliable. The "eye," or lump where the stem of the leaf grew out, should be smooth and unbroken. Poor cane has rough and imperfect spots, does not weave easily, and is likely to split.

Plastic cane is also available. It weaves easily, does not require soaking, is strong, and costs slightly less than other cane because little is wasted. Its smooth, shiny texture is suitable for painted chairs; real cane is preferable for fine old furniture (see figure 38).

Binder, to finish the edge of the seat, is cane one width wider than that used for weaving, and is included with the weaving cane.

The width of cane to use depends on the size of the holes in the chair seat and the distance between them. Table 1 is a guide to the size of cane to buy.

TABLE 1. Size of Cane to Use

Cane size	Size of hole in seat	Distance between holes in seat
Carriage (narrowest)	1/8	3/8
Superfine	1/8	3/8
Fine fine	3/16	1/2
Fine	3/16	5/8
Medium	1/4	3/4
Common (widest)	5/16	7/8

## What you need to weave a chair seat

1. Cane
2. Binder
3. Scissors
4. Keyhole saw
5. Awl, blunt ice pick, or knitting needle
6. Wood file
7. Steel rule and a sharp pencil
8. Wooden pegs—whittled from soft wood or purchased, 2 dozen
9. Pliers—long-nosed
10. Nail file or other flat-pointed tool
11. Bowl—5 to 6 inches in diameter
12. Glycerine—U.S.P. Standard, 3 tablespoons, or urea crystals, 2 tablespoons
13. Cloth or towel
14. Clamp clothespins—6
15. Knife
16. Razor blade
17. Tack hammer
18. Seat stain, if desired; cloth to apply



## Get ready to weave

### *The Seat*

Cut away the old seat, using a key-hole saw.

Clean any pieces of broken cane or dirt from the holes and the seat rails. Pull out old nails and tacks. Be sure you can get cane through all the holes. If any are filled, bore a hole through them.

Use the file to round the inside of the frame so no sharp edges will cut the cane.

If you need to refinish the wood, do this before the seat is caned.

### *The Cane*

Pull one of the strands of cane from the looped end of the hank, near where it is tied. As you pull, shake the hank so that the cane will not tangle or tear. Roll the strand, right

side out, to fit in a 5- to 6-inch bowl. Fasten the ends with a clamp clothespin.

Fill the bowl with a 10 per cent solution of glycerine, about  $1\frac{1}{2}$  tablespoons of glycerine to 1 cup of water. Soak the roll of cane in the solution. Warm water hastens the process. Or, use a solution of urea crystals available at drugstores in 1 pound jars, 1 tablespoon to 1 quart of water. Either solution helps to prevent the cane from drying out, but glycerine is preferable.

Let the cane soak for about 20 minutes or until it is soft and pliable.

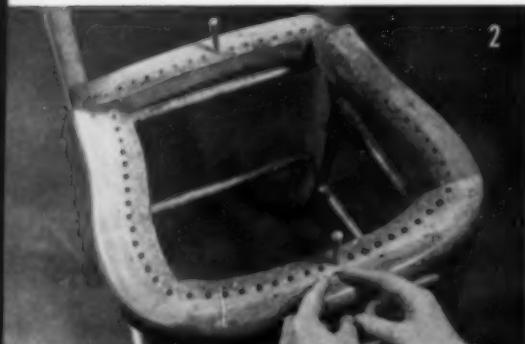
Plastic cane, enough for one chair, is sold in a bunch with strands cut 6-7 yards long; if you buy it in quantity on a spool, cut it in strands of similar length. Do not soak it.

## How to weave square or oblong seats

The usual form of weaving is called *seven-step weaving*: Weave from the upper side of the seat; first, from back to front, then from side to side, again from back to front, and from side to side, and then on the two diagonals. If you begin in the center of the back, you will find it easy to make sure the rows of cane are straight. Add the binder last.

### *Step 1*

Count the holes in the back rail. If there are an odd number of holes, put a peg in the center hole. If there are an even number of holes, put the peg in one of the holes nearest the center (figure 2). Do the same on the front rail, pegging the same side of the center as at the back (figure 2).



Take the roll of cane from the bowl and wipe off the excess water with your fingers or a cloth. Put another strand in to soak while you work.

Weave with the eye whenever you can so you do not roughen or break the strand (figure 3). (The eye is the lump where the stem of the leaf grew out.)

Pull out the peg from the back rail. Push about 4 inches of an end of cane down through this hole and fasten it with a peg.

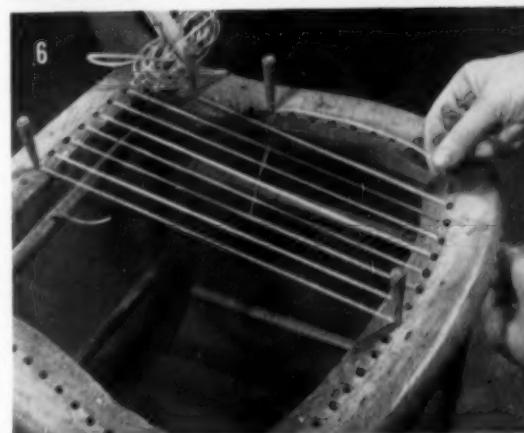
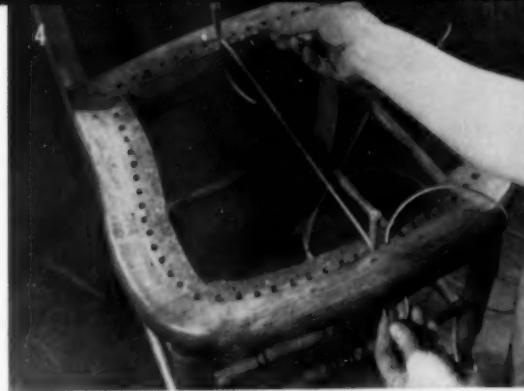
Bring the cane to the front rail, right side (smooth side) up; take out the peg there and push the cane through. Leave the cane slack, because the mesh tightens as weaving continues. Then replace the peg.

Push the cane up through the nearest hole on one side of the center. Pull it across the chair and down through the opposite hole at the back (figure 4).

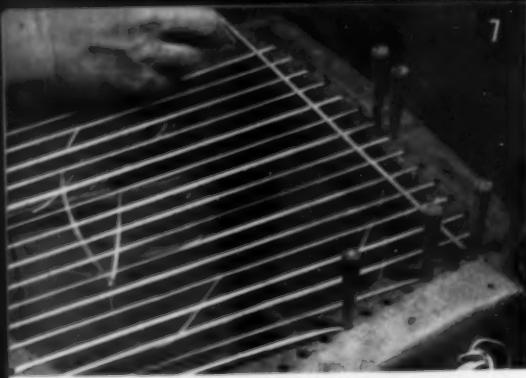
As you weave, hold the cane so that it sags a little below the level of the wood seat frame (figure 5). Weave large seats and plastic cane tighter. If the chair has a scoop seat, press the cane down as far as the bottom of the wood frame.

Continue weaving toward the side as long as you can weave in opposite holes. Do not use corner holes unless you are sure there will be room for the diagonal and binder canes that must also go through these holes. Leave the rest of the strand to use later. Fasten it with a clamp clothespin to keep it out of your way.

5



For seats wider at the front than at the back, weave separate pieces of cane as shown in figures 5 and 6.



Canes must not be carried across on the underside of the frame to block holes that must be used later.

As you continue weaving you can keep the cane in position without using pegs, except to fasten the ends. Weave the other half of the seat.

### Step 2

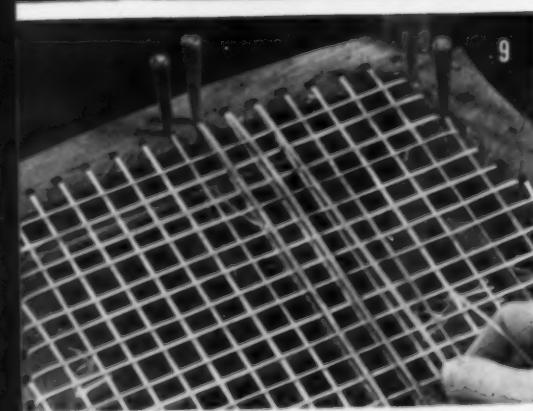
Start at the back on the right side rail as you face the chair, in a hole next to the corner.

Pull the cane up through the hole and across the seat over the weaving you have already done (figure 7). Continue weaving back and forth. If the front rail is curved, weave with separate pieces of cane (figure 8).

### Step 3

Weave as in step 1. Keep the strands slack as in steps 1 and 2. Weave in line with, and on top of, the first and second weaving and to the right of the cane you wove in the first step (figure 9).

*Fasten the ends of cane:* Fasten the ends of cane on the underside of the frame by tying them to or twisting them around the cane crossing from the next hole (figures 10, 11, and 25). Trim the end, leaving about  $\frac{1}{4}$  inch. Tie the end wherever you can before starting step 4 and then tie as you go along, so the pegs will not be

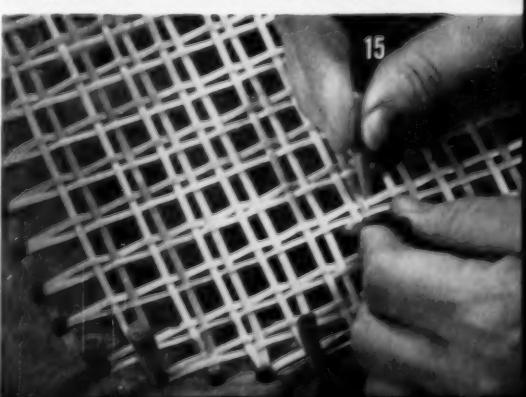
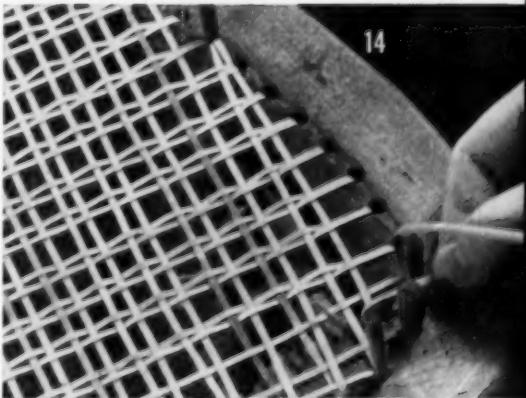


in your way. Moisten the ends of cane if necessary so they can be tied without breaking.

#### Step 4

Real weaving begins here, as you weave from side to side. Start at the back on the right as you face the chair and in a hole next to a corner. Weave over the canes on top and under the canes underneath (figure 12). As you work, straighten the canes you wove in step 2 to help keep step 4 canes in place. When you are a third or half way across, pull the length through that far, being careful that it does not twist or break. As you pull, keep your hand level with the chair rail. If you lift up, the weaving cane may cut canes already woven, especially if the cane is plastic. Continue weaving across the row. This draws together in pairs the canes from front to back and from side to side. When you reach the opposite side, put the end of cane down through the hole and peg it until you weave the next row. Pull the cane up through the nearest hole and weave back across the seat, so the cane passes over the same canes and under the same canes as it did the first time across (figure 13). If you find it easier, weave with the end of cane as shown in figure 13.

Repeat for the other rows. At the sides, be sure the canes in step 3 are on top and at the right of canes in step 1 (figure 14). Soak the woven cane with a wet sponge or cloth. Using two pegs, straighten rows and force them close together in pairs with hollow squares between (figure 15).



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### Step 5

Diagonal weaving begins in this step. Start at the back corner hole on the right side as you face the chair, and weave the first row toward the left front corner. You will weave the cane diagonally *over* the pairs from front to back and *under* those from side to side, keeping the cane straight from the corner holes. First lay it in position to decide how to start (figure 16). Weave with one hand on top of the seat and the other underneath (figure 17). Pull the cane through when you are a third or half way across. Be careful not to lift it and cut the strands already woven. The cane must lie flat and be so woven that the edges do not bind. The cane should pull through easily; it helps to moisten it with a damp cloth.

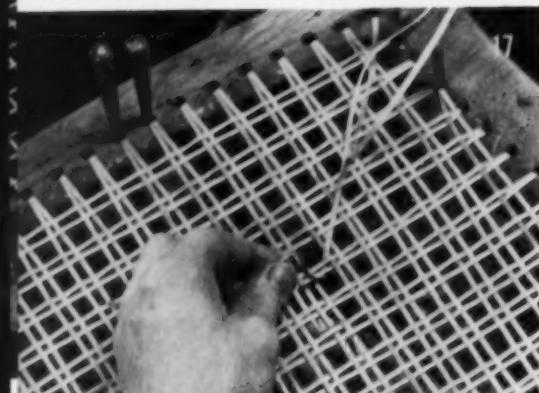
### Back Section

Weave the *back* section of the seat first, using holes on the left and back rails. For the second row, weave from front to back, going over and under the same rows you did before (figure 18).

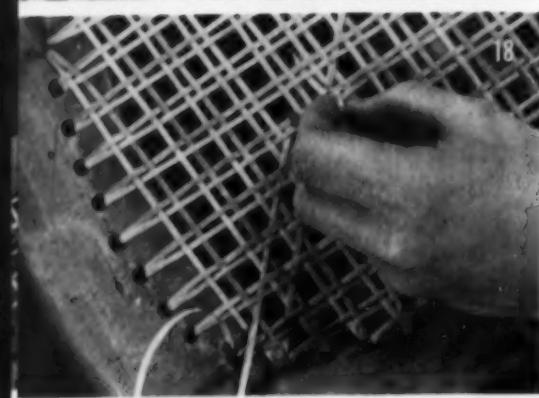
Weave two canes (figure 19) in each corner hole to make a "fish-head" or a "V". You may complete the fish-head on the back corner or finish it when weaving the front corner. Sometimes canes can be kept straight only by weaving a single cane in part of the corner holes. Keep the canes right side up. Do not skip holes on the underside of the seat.

Weave back and forth until you have reached a place near the center of the left side. If the seat is round

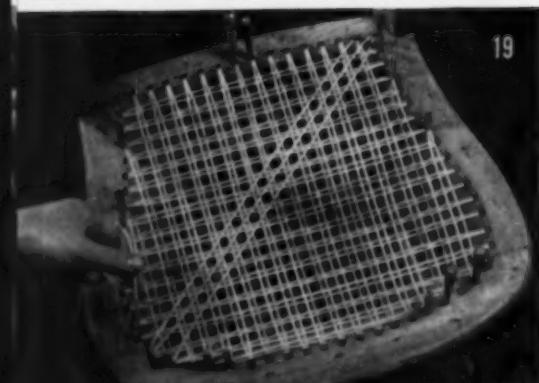
17



18



19



or definitely curved, weave only a few diagonals and then begin to skip holes or double in holes:

Keep the rows straight. If there are more holes on the sides than on the back, skip holes, usually not more than three, on the side (figure 20). If the seat is round, you may double in holes across the back as well as skip holes on the side.

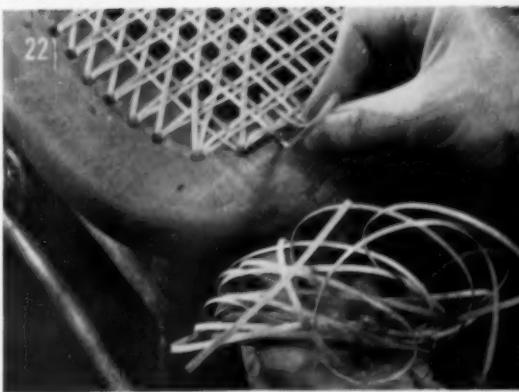
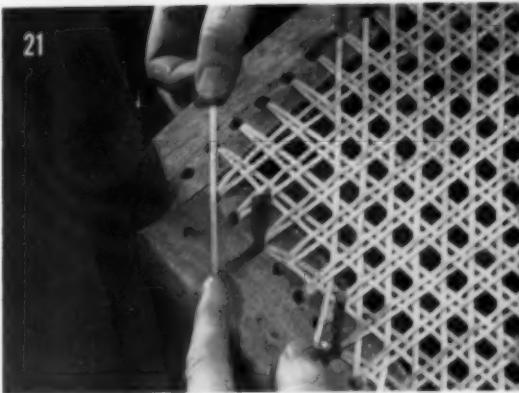
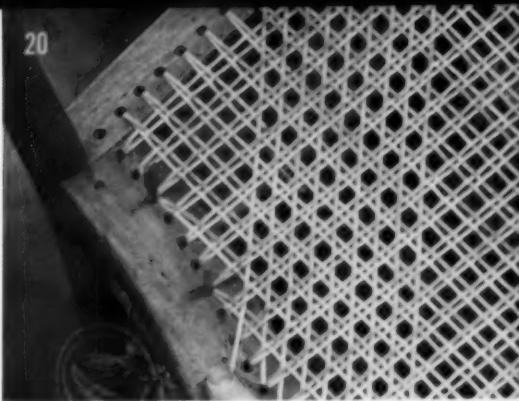
Make the canes lie straight across the back corner (figure 21). Check to see that you have skipped enough holes so that the same number are left on the back as on the side. Use a new piece of cane when you need to, or use an end left from previous weaving if you can do so without crossing holes on the lower side of the seat. Experienced weavers use all ends of cane so that there will be fewer knots to tie.

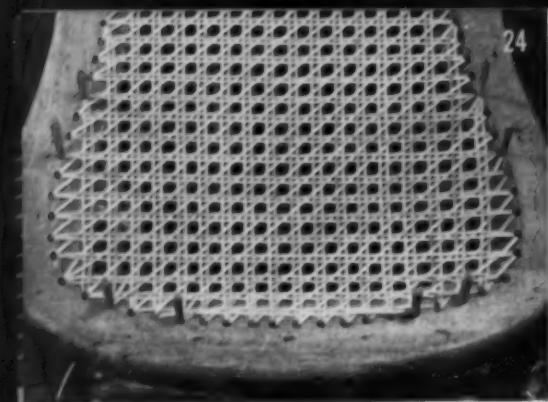
The rest of the seat must be woven according to the pattern started on this section.

#### Front section

Since the first diagonal was woven from back to front (figure 17), weave the first row on the front section from front to back using holes on the front and right rails (figure 22). Use a new piece of cane.

Check to keep the rows straight. Canes may curve slightly near the rail. Put them in the holes where they will curve the least (figure 23). To make the pattern alike on the two sides, weave twice (fish-head) in the hole or holes corresponding to those skipped on the left side of the chair. (Note





the four pegs, two on each side, figure 24). To prevent cutting the cane, you may fish-head in the hole above or below that directly opposite.

On the front rail, double in holes on the left and skip holes on the right. Note the four pegs (figure 24).

Tie ends as you go along, wherever there is a nearby strap to which to tie. In figure 25 one end (A) is tied and the other cane out of the same hole (B) can be tied to the same strap. Those from the other hole (C) cannot be tied until more straps are formed.

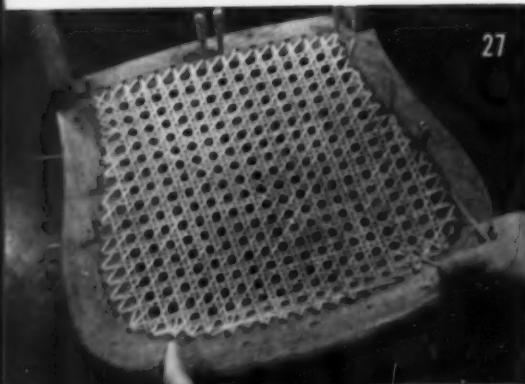
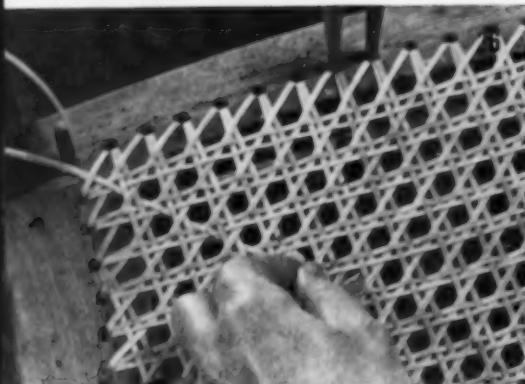
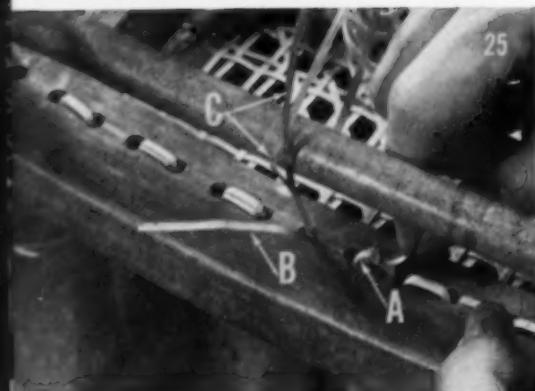
#### Step 6

Step 6 is the second diagonal, woven in the opposite direction. Start at the back corner hole on the left side as you face the chair and weave toward the front right corner. Weave diagonally *under* the pairs from front to back and *over* those from side to side (figure 26).

Weave the *front* section of the seat first. Complete the pattern started in the first diagonal, so the corners and the two sides correspond. Each half of the front and back rails must also correspond.

#### Front section

On the left side rail, weave twice in holes skipped by the first diagonal. Do the same on the front rail, right side. On the left side, skip those holes used twice before (figure 27). Do not carry cane across holes on the underside of the seat. Instead, cut the cane if necessary.



### Back section

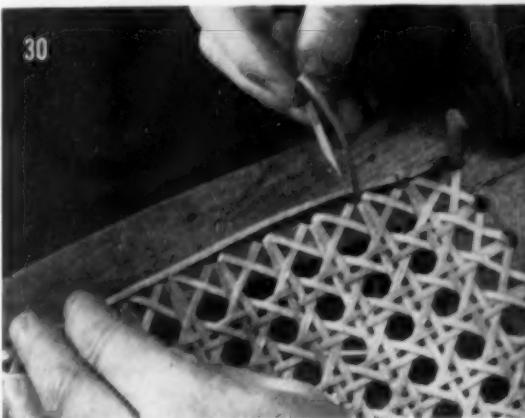
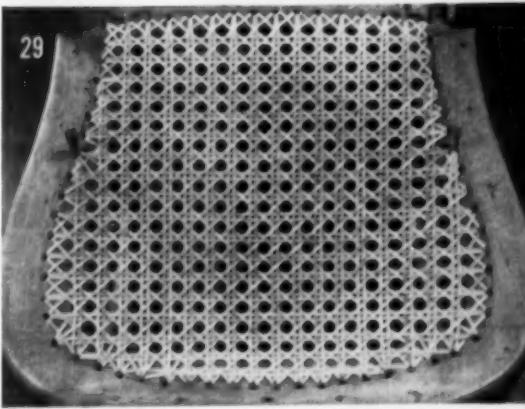
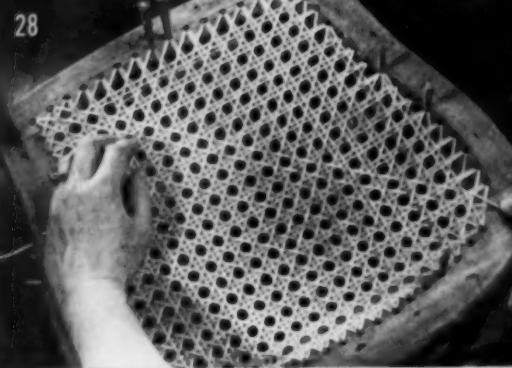
Continue the weaving as shown in figure 28. Use a new cane to weave from front to back; double in the back corner hole to match the opposite corner. Weave to the front and double in that corner hole.

On the side rail, skip holes woven in twice by the first diagonal (figure 29). On the back rail, skip any holes already used twice.

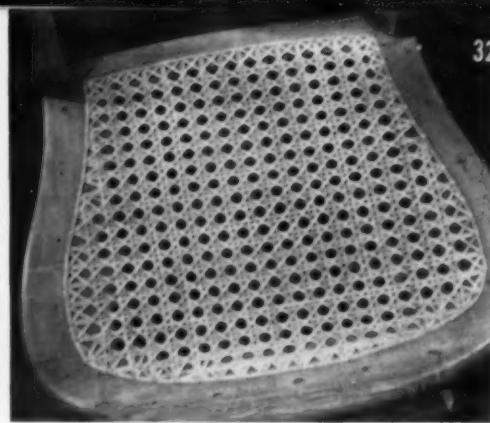
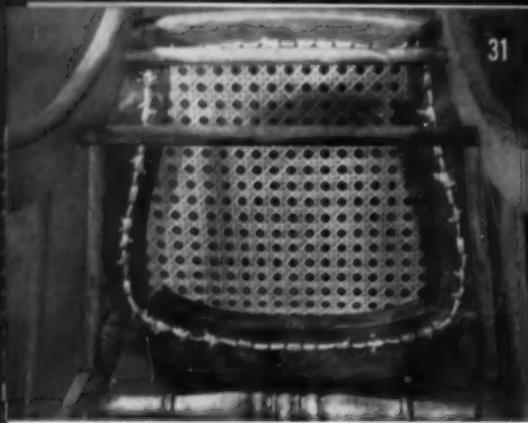
### Step 7

Binder cane is the next size wider than that used for weaving. It is used to cover the holes and to finish the edge of the weaving. If the seat is curved, use one strip long enough to go around. If corners are square or turns are sharp, cut separate lengths, each from 6 to 8 inches longer than the side of the seat where it will be used. Keep both binder and weaving cane wet and pliable. Lay one of the pieces of binder flat over the holes on one side of the seat with the center of the piece at about the center hole. Push one end through the corner hole and hold it there with a peg.

Use as long a piece of weaving cane as you can handle easily. Or, use a piece left from previous weaving, crossing the corner underneath if you wish. Fasten the binder at each hole (figure 30) or, if the holes are close together, at every other hole. Begin at the end where the binder is pegged. Pull the weaving cane up through the next hole, pass it over the top of the binder, and down through the same hole. Bring it up through the next hole on either side of the binder and



repeat. Keep both canes right side up, flat and tight. Use an awl or a bone knitting needle if you need to force an opening for the cane.

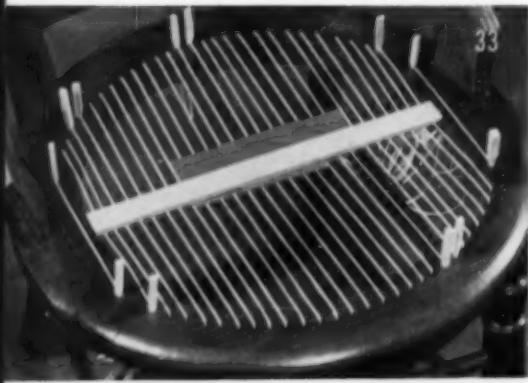


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If a continuous piece does not lie flat around the corner, start the second side by taking out the peg and pushing the end of the binder through the corner hole. Replace the peg, hammer it tightly, and file the top level with the chair frame. Repeat around

the chair. When the cane is dry, it should be tight enough to ring when you snap it sharply with your fingers. The mesh should be level with the seat frame. The completed seat, on the underside, is shown in figure 31, on the top, in figure 32.

## How to weave round seats

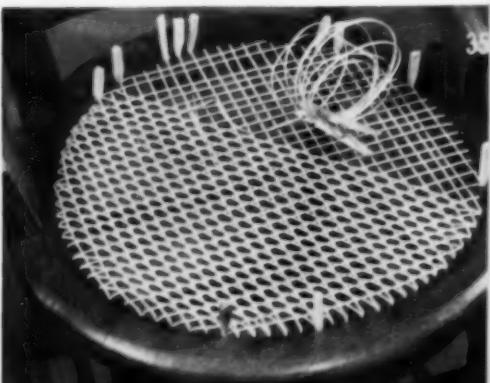
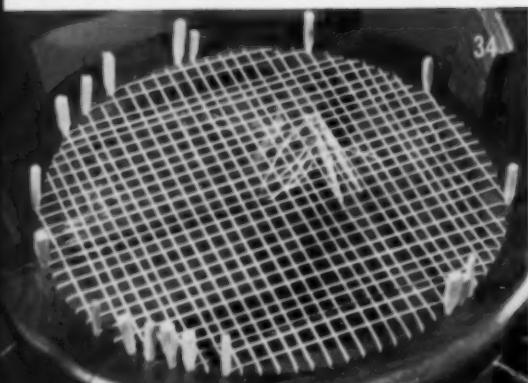


To help keep rows straight, especially in round seats, you may weave the second diagonal as step 3.

Figure 33. Weaving back to front (see step 1, p. 5). To keep canes in place, force a thin stick between the rails.

Figure 34. Weaving side to side (see step 2, p. 6).

Figure 35. Weaving the second diagonal (see step 6, p. 10).



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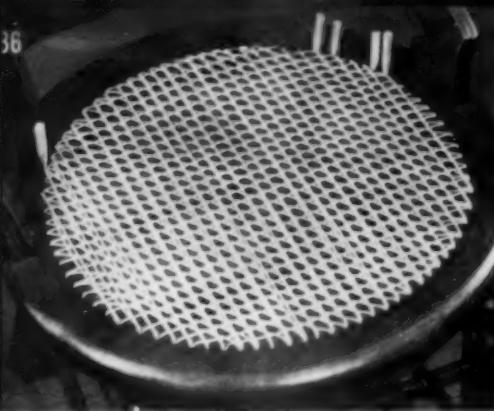


Figure 36. Weaving back to front (see step 3, p. 6).

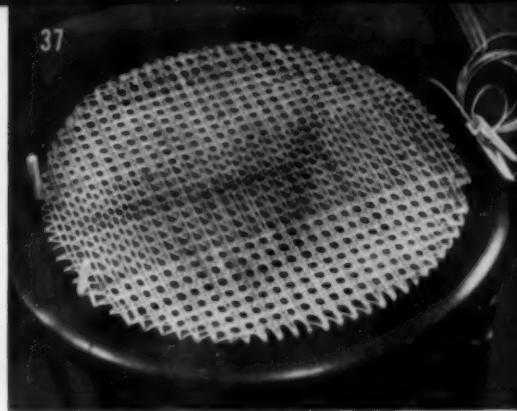


Figure 37. Weaving side to side (see step 4, p. 7).

Figure 38. The completed chair, showing the first diagonal weaving (see step 5, pp. 8-10) and the binder cane (see step 7, p. 11).

Weaving in figures 36-38 is done on two similar chairs.



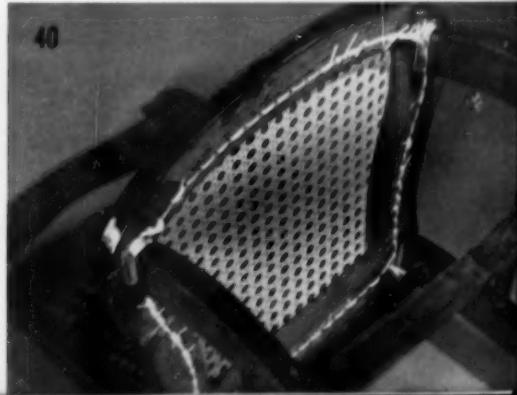
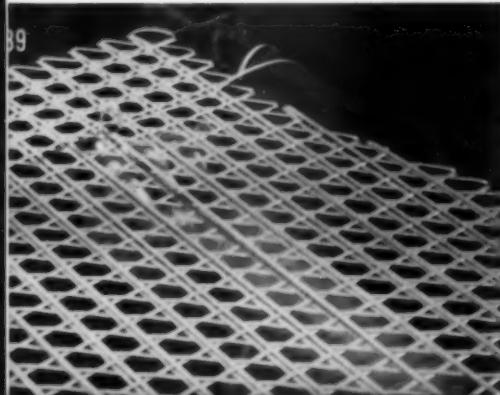
## How to weave other chairs

### Plastic Cane

Figure 39. Plastic cane is being used for this seat. The diagonal in step 6 can be woven as step 3 for any seat. Weave the second cross strand under the diagonal *and* the first row from back to front. Be very careful

not to cut strands already woven; plastic cane cuts more easily than real cane. Match the design, as previously directed.

Figure 40. The finished seat. The front legs must be glued to the seat after weaving is finished.





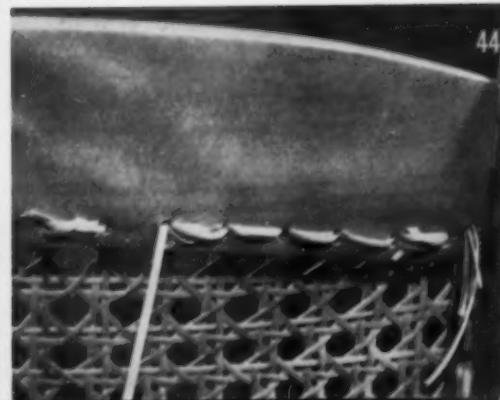
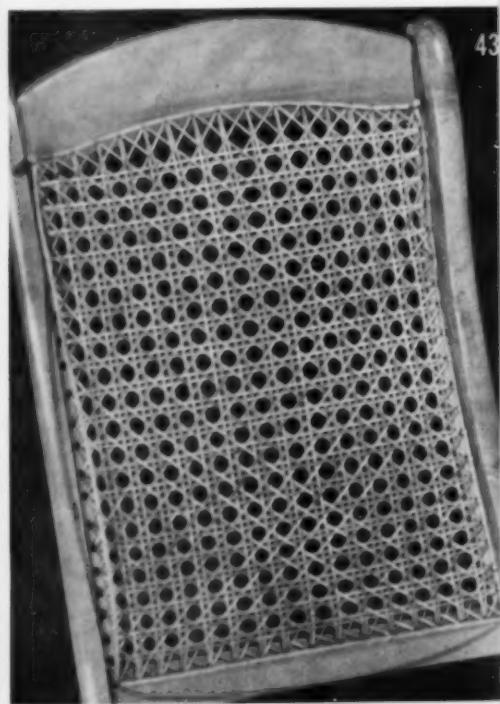
### *Back of Rocker*

Figure 41. Weaving the back of a rocker.

Figure 42. Weaving a diagonal for step 3, as in round seats, helps to hold canes in place.

Figure 43. Starting the binder.

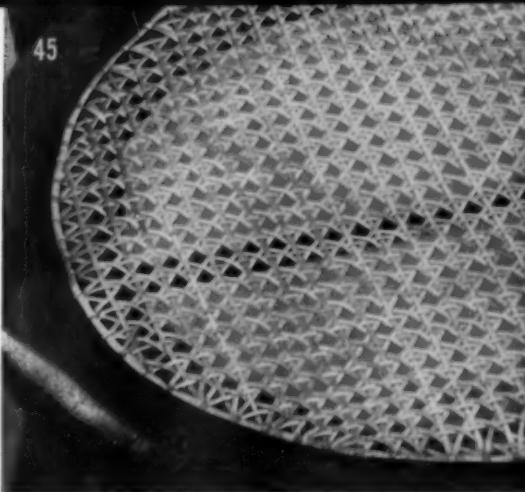
Figure 44. Twist the ends of cane or hold them with the binder cane, instead of tying knots.



### Five-Step Weaving

Figure 45. Five-step weaving, omitting one row from back to front and one from side to side. *Both* diagonals are woven *under* the row from back to front and *over* the row from side to side.

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## How to finish the seat

Tie and cut off any loose ends on the underside of the seat. Trim off rough places or hairs with a razor blade.

Cane has a hard, glossy surface that does not need a finish. If you want, however, you may apply a thin type of penetrating wood sealer to both sides to prevent drying and cracking. To blend the color of a new cane seat with the finish on the chair, apply a chair seat stain, available where you buy the cane. Rub the stain on the underside first, with a soft cloth or brush. Wipe off the surplus, and repeat on the upper side. When the

stain is dry, apply a second coat if you want a darker color.

### Cleaning

Cane seats can be cleaned with a cloth wrung from a solution made as follows: Place 1 quart of boiling water in the top of a double boiler (or two old basins). Add 3 tablespoons of boiled linseed oil and 1 tablespoon of turpentine. Put boiling water in the bottom of the boiler to help keep the solution hot. Do not place the mixture directly over a flame. Clean both sides of the seat.

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